

SECTION 09300

TILE

PART 1 GENERAL

1.1 SUMMARY

A. Scope

1. Provide all material and installation for shown, scheduled or specified, complete with all accessories and trim for a finished installation for the following:
 - a. Glazed wall tile.
 - b. Porcelain Mosaic tile.
 - c. Thresholds installed as part of tile installations.
 - d. Waterproof membrane for thin-set tile installations.
 - e. Crack-suppression membrane for thin-set tile installations.
 - f. Metal edge strips installed as part of tile installations.

B. Related Work Specified In Other Sections:

1. Membrane waterproofing - Division 7.
2. Gypsum board assemblies for cementitious backer units installed in gypsum wallboard assemblies - Division 9
3. Dimension stone tile - Division 9.

1.2 QUALITY ASSURANCE

- A. Installer Qualifications: Installer shall have completed a minimum of five projects of similar size, scope, and material specified. Provide evidence of successful project performance upon request of the Owner.
- B. Source Limitations for Tile: Obtain all tile of same type and color and finish from one source with resources to provide products from the same production run for each contiguous area of consistent quality in appearance and physical properties without delaying the Work.
- C. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.
- D. Source Limitations for Other Products: Obtain each of the following products specified in this Section through one source from a single manufacturer for each product:
 1. Stone thresholds.
 2. Waterproofing.
 3. Joint sealants.
 4. Cementitious backer units.
 5. Metal edge strips.

- E. Mockups: Construct mockups for each finish and construction specified prior to installation of the Work. Mockup shall demonstrate the installed conditions of material quality and workmanship. Mockups shall comply with the following requirements:
 - 1. Locate mockups on-site in the location and of the size directed by Owner.
 - 2. Notify Owner within seven days of the dates that the mockups will be constructed.
 - 3. Obtain Owner's approval of mockups before start of the Work.
 - 4. Retain and maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 5. Remove mockups from Project site when directed by the Owner.
 - 6. Approved mockups installed as part of the Work area left in an undisturbed condition may become part of the completed Work as inspected and approved by the Owner.
 - 7. Conduct pre-installation conference at Project site to comply with requirements in Division 1.
- F. Requirements of Regulatory Agencies:
 - 1. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:
 - a. Level Surfaces: Minimum 0.6.
 - b. Step Treads: Minimum 0.6.
 - c. Ramp Surfaces: Minimum 0.8.
- G. Provide tile of Standard Grade, in grade sealed cartons, per ANSI 137.1. Provide tile as manufactured by a member of the Tile Council of America or by specified manufacturers.
- H. Provide manufactured mortars and grouts with hallmarks indicating compliance with referenced standards.
- I. Conductive performance characteristics of static-conductive tile: Comply with NFPA Bulletin 56A.

1.3 TESTING AGENCY

- A. Retain the services of an Owner approved testing agency to perform required electrical resistance tests on the installed static-conductive tile flooring.

1.4 SUBMITTALS

- A. Furnish submittals for items that are identified in this Section. Refer to Division 1 for definition of codes for types of submittals and the administrative requirements governing submittal procedure. Additional submittal requirements pertaining to this Section are specified herein under this Article.
- B. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Full-size units of each type of trim and accessory for each color and finish required.
 - 3. Stone thresholds in 6-inch (150-mm) lengths.
 - 4. Metal edge strips in 6-inch (150-mm) lengths.

- C. Submit shop drawings of all special work that is not readily shown on the Drawings or in manufacturer's product data. Include locations of expansion, contraction, control and isolation joints in the tile substrates, and finished tile surfaces.
- D. Submit samples of tile units, materials, and colors not specified. Include manufacturers color charts and full range of colors available for each type of grout indicated.
- E. Submit manufacturer's product data describing the materials proposed; encircle specific items proposed if product data submitted is a general catalog.
- F. Test Report: Submit to show that flooring installation complies with requirements of REGULATORY AGENCY under QUALITY CONTROL.
- G. Waterproofing Guarantee: Guarantee the elastomeric waterproof tile setting adhesive system for 2 years against defective materials, workmanship and leaks, except leaks or other failure caused by abuse or failure of related work. During the guarantee period, the Contractor agrees to restore defective Work to the standard of the Contract Documents without cost to the Owner, including all materials, labor, refinishing and other costs incidental to the Work. The Contractor also agrees to perform the Work of restoration within 10 days after receipt of notice from the Owner; and, within 24 hours after receipt of notice from the Owner, to inspect the Work and immediately repair leaks in the Work.

1.5 PRODUCT DELIVERY

- A. Deliver all tile to the Work in the original, unopened containers, branded or labeled with the proper grade seal per TCA 137.1. Mark all containers with designations corresponding with the information given on the grade certificates. Containers will be subject to inspection by Owner's Representative before being opened, as well as during the progress of the Work.
- B. Deliver manufactured mortars and grouts in sealed moisture-proof containers bearing hallmarks indicating compliance with the Specifications.
- C. Deliver mortar and grout additives in sealed containers.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not start tile installation over concrete slabs until concrete has cured for at least five days and then aged for 14 additional days, or for such additional time as required for the concrete to have shrunk and attained equilibrium.
- B. Install tile when ambient air temperature, and temperatures of all materials, is 50 degF or higher. Provide room temperatures of 50 degF or higher from 24 hours prior to installation to at least five days after completion of installation in areas to receive tile. In addition, comply with minimum temperature recommendations of manufacturers for bonding and grouting materials to be used, and for curing of the same.

1.7 PROTECTION

- A. Protect adjoining finished surfaces before beginning tile installation. Protect tile and adjacent construction against damage during progress of the work until completion.
- B. Close spaces to traffic and other work where tile is being installed until tile has firmly set. Post appropriate notices and allow no work around freshly tiled walls and no walking on freshly tiled floors for at least 7 days after tile has been set.
- C. Cover surfaces such as tiled floors, stools and thresholds with heavy non-staining paper held in place with masking tape as soon as completed.

1.8 EXTRA MATERIALS

- A. Provide extra materials of each material and color specified matching the manufacturer's pattern and color run. Material shall be packaged with a protective cover for long term storage with labels identifying the contents by manufacturer, pattern, color, run, and color code established in the finish schedules.
 - 1. Tile and Trim Units: Provide three-percent of the amount installed of each type, pattern, composition, size, and color in full-size units.

PART 2 PRODUCTS

2.1 GLAZED WALL TILE

- A. Glazed Wall Tile: Glazed interior ceramic tile, Standard Grade per Section 6 of TCA 137.1, 4-1/4 inch x 4-1/4 inch face size, 5/16 inch thick, cushion edge with spacer lugs, in single units or face-mounted sheets, with bright or matte glazed finish as scheduled, to match colors specified in the Finish Schedule.
 - 1. American Olean Tile.
 - 2. Dal-Tile.
 - 3. Florida Tile.
 - 4. United States Ceramic Tile Co.
- B. Glazed Wall Tile Trim: Coved internal and bull nose external corners, cap units at top of wainscots, and other shapes required to complete the installation, all of kind, size and glaze to match tile and the conditions, to match colors specified in the Finish Schedule.
- C. Glazed Wall Tile Coved Bases: Of same material and finish as wall tile, flush-type coved units, 4-1/4 inch x 4-1/4 inch size, with bull nose top to match colors specified in the Finish Schedule.

2.2 PORCELAIN MOSAIC TILE

- A. Porcelain Mosaic Tile: Unglazed (except use satin glazed for walls), impervious body, porcelain mosaic tile, standard Grade Per Section 5 of TCA 137.1, 1/4 inch thick, cushion edges, 2 inch x

2 inch face size, face-mounted in sheets, to match patterns and colors specified in Finish Schedule.

1. American Olean Tile.
2. Dal-Tile.
3. United States Ceramic Tile Co.
4. Winburn Tile Mfg. Co.

- B. Non-Slip Porcelain Mosaic Tile: Porcelain mosaic tile, unglazed 2 inch x 2 inch face size, cushion edges, face-mounted in sheets, incorporating minimum 7-1/2% abrasive grains by weight in the tile body, to match patterns and colors specified in Finish Schedule.
- C. Porcelain Mosaic Tile Trim: Coved internal and bull nose external corners, cap units at top of wainscots, coves and bull noses at curbs, and other shapes required to complete the installation, all of kind, color, size and glaze to match tile and fit conditions specified in Finish Schedule.
- D. Coved Bases: At porcelain mosaic tile floors where there is no wall tile base, use 5 inch high coved tile base consisting of unglazed trim shapes composed of coved unit 1 inch high x width of floor tile. Use proper number of tile courses and a bull nose top unit to achieve the 5-inch height, to match colors specified in Finish Schedule.
- E. Ceramic Mosaic Tile Coved Bases: Where ceramic mosaic floor tile joins ceramic mosaic wall tile, use unglazed coved trim units of size 1-inch high x width of tile used, to match colors specified in Finish Schedule.

2.3 THRESHOLDS

- A. Marble: ASTM C 503 with minimum abrasion resistance of 10 per ASTM C 1353 or ASTM C 241 with matte finish. Domestic per Marble Institute of America, Inc. "Group A" for soundness, selected by the Owner's Representative. Furnish in proper one-piece length for full width of single openings, jointed at center of jambs for multiple openings.
- B. Solid Polymer: Made from homogeneous solid sheets of filled plastic resin complying with material and performance requirements in ANSI Z124.3, for Type 5 or Type 6, without pre-coated finish.
1. Avonite, Inc.
 2. DuPont Corian.
 3. Formica Surell.
 4. Nevamar Fountainhead.
 5. Wilsonart Gibraltar.
- C. For thresholds, use 1/2 inch thick with exposed edges beveled down to 1/4-inch thickness, and with honed finish on all exposed surfaces, sawn finish on concealed surfaces.
- D. For stools, use 7/8 inch thick with exposed edges rounded, and with polished finish on all exposed surfaces, sawn finish on concealed surfaces.

2.4 SETTING AND GROUTING MATERIALS

- A. Dry-Set Portland Cement Mortar (Thin Set): For wall applications, provide non-sagging mortar that complies with Per ASTM C 150, Type 1 and ANSI A118.1.
 - 1. Use white cement for wall grout.
- B. Sand: For floor applications, natural sand per ASTM C 144, washed clean and graded.
 - 1. Use fine sand passing 1/16-inch mesh screen for grout.
 - 2. Use white sand.
- C. Hydrated Lime: Per ASTM C 206 or C 207, Type S.
- D. Water: Clean and potable, handled in clean containers not used for any other purpose.
- E. Grout Coloring Additive: Lime proof, lightproof, non-fading mineral pigments of approved manufacturer and brand, of color required to produce approved mortar color.
- F. Premixed Colored Grout: Non-expanding, non-shrinking, dense premixed colored grout in custom colors as selected.
 - 1. For Floor Tile: Use sanded type grout.
 - a. Bostik Construction Products “Hydroment Ceramic Tile Grout”.
 - b. Syracuse Adhesives Co. “SAC 80 Joint Filler and Tile Grout”.
 - c. H. B. Fuller Co. “TA-660 Joint Filler Floor Grout”.
 - d. Summitville “S-700”.
 - 2. For Wall Tile: Use unsanded type grout.
 - a. Bostik Construction Products “Hydroment Dry Tile Grout (Unsanded)”.
 - b. Syracuse Adhesives Co. “SAC 20 Dry Grout”.
 - c. H. B. Fuller Co. “TA-610 Colored Wall Grout”.
 - d. Summitville “S-667”.
- G. Dry-Set Mortar: Per ANSI A118.1, of proper formulation recommended by the manufacturer for the type of tile and substrate (wall or floor, and substrate material) on which the dry-set mortar is to be used. Use factory-sanded dry-set mortar.
- H. Epoxy Mortar and Grout: Per ANSI A118.3, non-staining type, formulated in compliance with TCA Formula AAR-II, in colors to match those specified in Finish Schedule.
 - 1. Laticrete International Inc. “Latapoxy SP-100 Stainless Epoxy Grout”.
 - 2. Hydroment Incorporated.
 - 3. TEC Specialty Products.
 - 4. Mapei Corporation.
- I. Water-Resistant Organic Adhesive: Per ANSI A 136.1, Type I.
- J. Conductive Dry-Set Portland Cement Mortar and Grout: Per ANSI A 118.2.
- K. Latex-Portland Cement Mortar and Grout: Per ANSI A118.4, consisting of a liquid latex additive mixed with a prepackaged dry-set mortar recommended by or manufactured by the

latex additive manufacturer and formulated in strict accordance with the additive manufacturer's instructions.

- L. Elastomeric Waterproof Tile-Setting Adhesive
 - 1. Bostik Construction Products "Hydroment Ultra-Set Membrane" and "Hydroment 1900 Mortar".
 - 2. Laticrete International, Inc. "Laticrete 9235 Waterproofing Membrane" and "Laticrete Tile Setting Mortar 4237".

2.5 MISCELLANEOUS MATERIALS

- A. Reinforcement: 2 inch x 2 inch 16/16 galvanized welded wire fabric per ASTM A 185, in flat sheets.
- B. Control Joint Materials:
 - 1. Sealant: Single-component polyurethane base sealant, non-sag type, meeting Fed. Spec. TT-S230, or two-component polyurethane base sealant meeting Fed. Spec. TT-S-227, Type II non-sag for vertical surfaces and Type I self-leveling for horizontal surfaces. Furnish in approved standard color to match grout color as closely as possible.
 - 2. Back-Up Material: Polyethylene foam gasket stock:
 - a. Dow "Ethafoam SB Brand Sealant Backer Rod".
 - b. Sonneborn "Sonofoam Backer Rod".
 - c. Williams Products "Expand-O-Foam Cord".
 - 3. Joint Filler: Cork per ASTM D 1752, Type 2, or 70-durometer neoprene or butyl rubber.

PART 3 EXECUTION

3.1 PREPARATION

- A. Inspect all surfaces upon which materials will be applied, and determine if there are any conditions detrimental to a successful tile installation, prior to proceeding with the work. The installation of tile work will be considered an acceptance of the surfaces to be covered, and claims for failure of tile work because of unsatisfactory sub-surfaces will not be allowed.
- B. Prepare all surfaces upon which these materials will be applied as required to properly receive them. Remove from the substrate surfaces all dirt, grease, oil, paint, and other surface contaminations that will prevent proper bonding. Remove all ridges, fins, projections, high spots and other irregularities that would interfere with proper installation work. Wet concrete and masonry substrate surfaces with water, and allow to surface dry, just prior to installing setting beds.
 - 1. Do not wet surfaces to receive epoxy mortar.
 - 2. Do not wet surfaces to receive organic adhesive.

3.2 GENERAL

- A. Install mortar beds of thicknesses required to provide the finish lines, planes, slopes and elevations required. Where floors have drains, slope mortar beds to drains; otherwise floors shall be level and flat. Walls shall be plumb and flat. Bond mortar beds to back-up construction and tile to mortar beds.
- B. Form joints between tile units, or tile sheets, in straight continuous lines so that they intersect uniformly with the units and joints running in the opposite direction, plumb and level on walls, parallel to walls on floors. Align tile joints in walls with floor joints, where practical.
 - 1. Provide maximum 1/16-inch wide joints in mosaic tile work.
 - 2. Provide maximum 1/8-inch wide joints in glazed wall tile work.
- C. Wash all finish surfaces clean, free from mortar, dirt and other defacements.
- D. Neatly cut and accurately fit all tile work around piping and other installations, which pierce the tile work, at irregular shaped places, and at the junction with other materials. Do not chip or otherwise damage the surface of the tile during cutting. Grind cut edges smooth and even.
- E. Lay out the work as follows:
 - 1. Walls: Where possible, lay out Work so that no tile less than half size occurs. Unless tile Work is required to fill vertical spaces exactly, heights indicated shall be maintained in full courses to produce nearest attainable heights without cutting.
 - 2. Floors: Before applying setting bed, establish borderlines. Center field work in both directions to permit laying pattern with minimum of cut tiles. Lay floor without borders from centerlines outwards. Make necessary adjustments at walls. Set tile base units so that finish surfaces are flush with floor tile and wall tile where the base meets it.
- F. Mix and use proprietary or trade-marked materials in strict accordance with manufacturer's instructions, unless otherwise specified.
- G. Provide this work and materials per the Tile Council of America Handbook for Ceramic Tile Installation, American National Standards Institute Standard Specifications; and, to the further requirements specified in this Section.

3.3 SETTING BEDS

- A. Contractor may set interior ceramic tile with dry-set mortar or latex-portland cement mortar where thin-set mortar is used floors in areas not having a hold-down in the concrete base slab.
- B. Dry-Set Mortar:
 - 1. Interior Walls Not Otherwise Specified: Install tile using dry-set mortar per ANSI A 108.5 and TCA Handbook Method W202 on masonry or concrete and W243 on gypsum board.
 - 2. Interior Floors Not Otherwise Specified: Install tile using dry-set mortar per ANSI A 108.5 and TCA Handbook Method F113.
 - 3. Exterior Walls Not Otherwise Specified: Install tile using dry-set mortar per ANSI A 108.5 and TCA Handbook Method W202 on masonry or concrete.

4. Exterior Floors Not Otherwise Specified: Install tile using dry-set mortar per ANSI A 108.5 and TCA Handbook Method F102.
- C. Latex-Portland Cement Mortar:
1. Interior Walls Not Otherwise Specified: Install tile using latex-Portland cement mortar per ANSI A 108.5 and TCA Handbook Method W202 on masonry or concrete and W243 on gypsum board.
 2. Interior Cementitious Backer Board Walls: Install tile on cementitious backer board surfaces using latex-portland cement mortar per ANSI A108.5 and TCA Handbook Method W244. Before installing wall tile, treat all joints and corners in cementitious backer board substrate with 2inch wide glass fiber mesh tape embedded in a skim coat of the latex-portland cement mortar.
 3. Interior Floors Not Otherwise Specified: Install tile using latex-portland cement mortar per ANSI A 108.5 and TCA Handbook Method F113.
 4. Exterior Walls Not Otherwise Specified: Install tile using latex-portland cement mortar per ANSI A 108.5 and TCA Handbook Method W202 on masonry or concrete.
 5. Exterior Floors Not Otherwise Specified: Install tile using latex-portland cement mortar per ANSI A 108.5 and TCA Handbook Method F102.
- D. Portland Cement Mortar:
1. Interior Walls: Install tile using portland cement mortar per ANSI A 108.1 and TCA Handbook Method W211.
 2. Interior Floors: Install tile in full portland cement mortar bed of thickness necessary to bring finished tile floor to elevations and slopes shown. Follow ANSI A 108.1 and TCA Handbook Method F112 for direct installation on slab or F121 (with reinforcing) for installation over membrane waterproofing.
 3. Exterior Walls: Install tile using portland cement mortar per ANSI A 108.1 and TCA Handbook Method W201.
 4. Exterior Floors: Install tile in full portland cement mortar bed of thickness necessary to bring finished tile floor to elevations and slopes shown, per ANSI A 108.1 and TCA Handbook Method F101.
- E. Epoxy Mortar, Thin-Set Method for Floor Tile: Install tile in epoxy mortar bed per ANSI A 108.6 and TCA Handbook Method F131.
- F. Water-Resistant Organic Adhesive:
1. Interior Walls: Install tile in organic adhesive per ANSI A 108.4 and TCA Handbook Method W242.
 2. Interior Floors: Install tile in organic adhesive per ANSI A 108.4 and TCA Handbook Method F116. Prior to application of organic adhesive setting bed, apply organic adhesive mixture as a waterproof membrane on the substrate.
- G. Elastomeric Waterproof Tile-Setting Adhesive for Floor Tile:
1. Mix and apply system per manufacturer's instructions.
 2. All aspects of surface preparation, membrane installation and setting of tile shall be in accordance with the instructions of the manufacturer of the approved system.

3. Extend membrane up walls behind tile bases to height of top of tile bases.
4. Set tile on waterproof membrane only in thinset-mortar/adhesive specified as part of the system. Do not mix the products of different manufacturers.
5. Determine from the manufacturer of the accepted tile-setting system that the specific grout to be used for grouting the tile is compatible with the tile-setting mortar/adhesive to be provided. If the specified grout is not compatible, propose another grout product for the Owner's Representative's acceptance.

3.4 CONTROL JOINTS

- A. Construct control joints in tile work per TCA Handbook Method EJ171, complete with filler, back-up and bond breaker as required, and calk with sealant. Match width of control joints with tile joints.
- B. For Walls: Provide directly over masonry and gypsum board control joints, and 12 to 16 feet o.c. vertically and horizontally elsewhere.
- C. For Floors: Provide directly over building expansion joints and other joints in concrete subslabs; and at 24 to 36 feet each way in large areas.
 1. Exterior Floors: Provide 3/8-inch wide control joints at 12 feet on center.

3.5 GROUTING

- A. Tile Set with Dry-Set or Latex-Portland Cement Mortar:
 1. Walls Not Otherwise Specified: Grout with white latex-portland cement grout per ANSI A 108.5 and grout manufacturer's instructions.
 2. Walls: Grout ceramic mosaic tile with field-tinted colored latex-portland cement grout or premixed colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 3. Walls: Grout glazed wall tile with field-tinted colored unsanded (neat) latex-portland cement grout or premixed unsanded colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 4. Walls: Grout tile with stainless epoxy grout in standard colors scheduled, per ANSI A108.6, TCA Handbook Method F115, and grout manufacturer's instructions.
 5. Floors Not Otherwise Specified: Grout tile with gray latex-portland cement grout per ANSI A 108.5 and grout manufacturer's instructions.
 6. Floors: Grout tile with field-tinted colored latex-portland cement grout or premixed colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 7. Floors: Grout tile with stainless epoxy grout in standard colors as scheduled, per ANSI A 108.6, TCA Handbook Method F115, and grout manufacturer's instructions.
- B. Tile Set with Portland Cement Mortar:
 1. Walls Not Otherwise Specified: Grout tile with white latex-portland cement grout per ANSI A 108.5 and grout manufacturer's instructions.

2. Walls: Grout ceramic mosaic tile with field-tinted colored latex-portland cement grout or premixed colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 3. Walls: Grout glazed wall tile with field-tinted colored unsanded (neat) latex-portland cement grout or premixed unsanded colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 4. Walls: grout tile with stainless epoxy grout in standard colors scheduled, per ANSI A108.6, TCA Handbook Method W221 or W222, and grout manufacturer's instructions.
 5. Floors Not Otherwise Specified: Grout tile with gray latex-portland cement grout per ANSI A 108.5 and per grout manufacturer's instructions.
 6. Floors: Grout tile with field-tinted colored latex-portland cement grout or premixed colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 7. Floors: Grout tile with stainless epoxy grout in standard colors as scheduled, per ANSI A 108.6, TCA Handbook Method F115, and grout manufacturer's instructions.
- C. Floor Tile Set with Epoxy Mortar: Grout with stainless epoxy grout in standard colors as scheduled, per ANSI A 108.6, TCA Handbook Method F131, and per grout manufacturer's instructions.
- D. Tile Set with Water Resistant Organic Adhesive:
1. Walls Not Otherwise Specified: Grout with white latex-portland cement grout per ANSI A 108.5 and per grout manufacturer's instructions.
 2. Walls: Grout tile with field-tinted colored latex-portland cement grout or premixed colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 3. Walls: Grout glazed wall tile with field-tinted colored unsanded (neat) latex-portland cement grout or premixed unsanded colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 4. Floors Not Otherwise Specified: Grout tile with gray latex-portland cement grout per ANSI A 108.5 and per grout manufacturer's instructions.
 5. Floors: Grout tile with field-tinted colored latex-portland cement grout or premixed colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
- E. Floor Tile Set with Elastomeric Waterproof Tile-Setting Adhesive:
1. Floors Not Otherwise Specified: Grout with gray latex-portland cement grout per ANSI A 108.5 and per grout manufacturer's instructions.
 2. Floors: Grout with field-tinted colored latex-portland cement grout or premixed colored grout in custom colors as scheduled; mix, apply and cure per grout manufacturer's instructions.
 3. Floors: Grout tile with stainless epoxy grout in standard colors scheduled, per ANSI A108.6, TCA Handbook Method F115, and grout manufacturer's directions.

3.6 THRESHOLDS

- A. Cut and fit-to-fit the required spaces, with 1/16-inch wide joints between marble and adjacent constructions. Furnish single pieces for each location where possible. Notch threshold ends to fit around stops on door frames. Round all exposed corner edges. Set in same kind of beds as used for adjacent tile surfaces, adjust top surface to a flat level plane, and fill all joints with grouting mortar colored to match the threshold.

3.7 FIELD QUALITY CONTROL

- A. Not less than one month after installation and final cleaning, test the conductive ceramic tile flooring to determine the electrical resistance requirements of NFPA 56A. Furnish testing equipment and perform the test in accordance with NFPA 56A.
- B. Should conductive flooring fail to comply with requirements of NFPA 56A, remove such flooring and replace with flooring that does comply, all at no cost to the Owner.

3.8 ADJUSTING AND CLEANING

- A. Remove all broken, chipped, loose, stained, or otherwise unsatisfactory work, and patch and restore imperfect materials and workmanship to condition compatible with Contract requirements.
- B. When so directed by the Owner's Representative, after other adjacent work is substantially completed, remove and dispose of protective coverings and thoroughly clean all tile and marble work by approved manner, using a non-acidic type cleaner.

END OF SECTION

Revision History	
Date	Rev. No.
A	0
B	0
C	0
D	0
E	0
F	0
02-19-09	0

DS/djo

C:\d\timsdata\sf\brookhaven_national_laboratory\sf070003\200-projexec\280-spec\09300.doc